Meera Nanda, Postmodernism, Hindu nationalism and `Vedic science', 2004

Pages 1-12

The first part of the two-part article:

Postmodernism, Hindu nationalism and `Vedic science'

The mixing up of the mythos of the Vedas with the logos of science must be of great concern not just to the scientific community, but also to the religious people, for it is a distortion of both science and spirituality.

The Vedas as books of science

IN 1996, the Vishwa Hindu Parishad (VHP) of the United Kingdom (U.K.) produced a slick looking book, with many well-produced pictures of colourfully dressed men and women performing Hindu ceremonies, accompanied with warm, fuzzy and completely sanitised description of the faith. The book, *Explaining Hindu Dharma: A Guide for Teachers*, offers "teaching suggestions for introducing Hindu ideas and topics in the classroom" at the middle to high school level in the British schools system. The authors and editors are all card-carrying members of the VHP. The book is now in its second edition and, going by the glowing reviews on the back-cover, it seems to have established itself as a much-used educational resource in the British school system.

What "teaching suggestions" does this *Guide* offer? It advises British teachers to introduce Hindu dharma as "just another name" for "eternal laws of nature" first discovered by Vedic seers, and subsequently confirmed by modern physics and biological sciences. After giving a false but incredibly smug account of mathematics, physics, astronomy, medicine and evolutionary theory contained in the Vedic texts, the *Guide* instructs the teachers to present the Vedic scriptures as "not just old religious books, but as books which contain many true scientific facts... these *ancient scriptures of the Hindus can be treated as scientific texts*" (emphasis added). All that modern science teaches us about the workings of nature can be found in the Vedas, and all that the Vedas teach about the nature of matter, god, and human beings is affirmed by modern science. There is no conflict, there are no contradictions. Modern science and the Vedas are simply "different names for the same truth".

This is the image of Hinduism that the VHP and other Hindutva propagandists want to project around the world. The British case is not an isolated example. Similar initiatives to portray Vedic-Aryan India as the "cradle" of world civilisation and science have been launched in Canada and the United States as well. Many of these initiatives are beneficiaries of the generous and politically correct policies of multicultural education in these countries. Under the worthy cause of presenting the "community's" own views about its culture, many Western governments are inadvertently funding Hindutva's propaganda.

KAMAL NARANG

Prime Minister Atal Bihari Vajpayee and Human Resource Development Minister Murli Manohar Joshi at the inauguration of the Indian Science Congress in New Delhi in 2001. The obsession for finding all kinds of science in all kinds of obscure Hindu doctrines has been dictating the official education policy of the BJP ever since it came to power nearly half a decade ago.

But what concerns us in this article is not the long-distance Hindutva (or "Yankee Hindutva", as some call it), dangerous though it is. This essay is more about the left wing-counterpart of Yankee Hindutva: a set of postmodernist ideas, mostly (but not entirely) exported from the West, which unintentionally ends up supporting Hindutva's propaganda regarding Vedic science. Over the last couple of decades, a set of very fashionable, supposedly "radical" critiques of modern science have dominated the Western universities. These critical theories of science go under the label of "postmodernism" or "social constructivism". These theories see modern science as an essentially Western, masculine and imperialistic way of acquiring knowledge. Intellectuals of Indian origin, many of them living and working in the

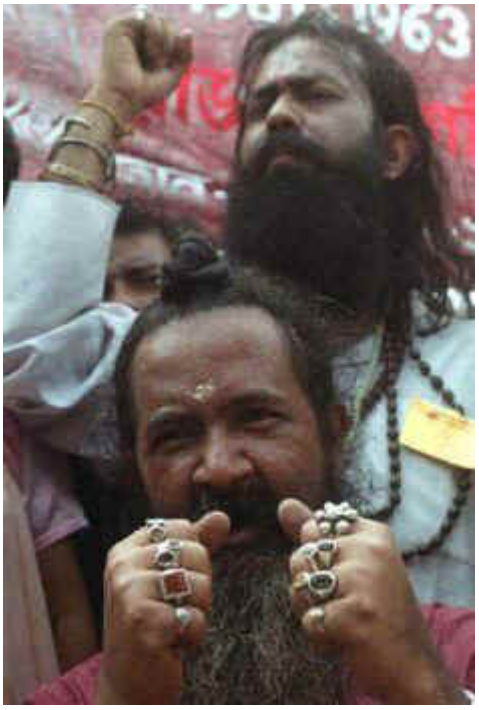
West, have played a lead role in development of postmodernist critiques of modern science as a source of colonial "violence" against non-Western ways of knowing.

In this two-part essay, I will examine how this postmodernist left has provided philosophical arguments for Hindutva's claim that Vedas are "just another name" for modern science. As we will see, postmodernist attacks on objective and universal knowledge have played straight into Hindu nationalist slogan of all perspectives being equally true - within their own context and at their own level. The result is the loud - but false - claims of finding a tradition of empirical science in the spiritual teachings of the Vedas and Vedanta. Such scientisation of the Vedas does nothing to actually promote an empirical and rational tradition in India, while it does an incalculable harm to the spiritual message of Hinduism's sacred books. The mixing up of the *mythos* of the Vedas with the *logos* of science must be of great concern not just to the scientific community, but also to the religious people, for it is a distortion of both science and spirituality.

In order to understand how postmodern critiques of science converge with Hindutva's celebration of Vedas-as-science, let us follow the logic behind VHP's *Guide for Teachers*.

This *Guide* claims that the ancient Hindu scriptures contain "many true scientific facts" and therefore "can be treated as scientific texts". Let us see what these "true scientific facts" are. The prime exhibit is the "scientific affirmation" of the theory of *guna* (Sanskrit for qualities or attributes). Following the essential Vedantic idea that matter and spirit are not separate and distinct entities, but rather the spiritual principle constitutes the very fabric of the material world, the theory of *guna*s teaches that matter exhibits spiritual/moral qualities. There are three such qualities or *guna*s which are shared by all matter, living or non-living: the quality or *guna* of purity and calmness seeking higher knowledge (*sattvic*), the quality or *guna* of impurity, darkness, ignorance and inactivity (*tamsic*) and the quality or *guna* of activity, curiosity, worldly gain (*rajasic*). Modern atomic physics, the VHP's *Guide* claims, has confirmed the presence of these qualities in nature. The evidence? Physics shows that there are three atomic particles bearing positive, negative and neutral charges, which correspond to the three *guna*s! From this "scientific proof" of the existence of essentially spiritual/moral *guna*s in atoms, the *Guide* goes on to triumphantly deduce the "scientific" confirmation of the truths of all those Vedic sciences which use the concept of *guna*s (for example, Ayurveda). Having "demonstrated" the scientific credentials of Hinduism, the *Guide* boldly advises British school teachers to instruct their students that there is "no conflict" between the eternal laws of *dharma* and the laws discovered by modern science.

PARTH SANYAL



In Kolkata, astrologers demonstrating against the West Bengal government's decision not to introduce astrology as a subject in the State's universities. A file picture.

One of the most ludicrous *mantra*s of Hindutva propaganda is that there is "no conflict" between modern science and Hinduism. In reality, everything we know about the workings of nature through the methods of modern science radically *disconfirms* the presence of any morally significant *guna*s, or *shakti*, or any other form of consciousness in nature, as taught by the Vedic cosmology which treats nature as a manifestation of divine consciousness. Far from there being "no conflict" between science and Hinduism, *a scientific understanding of nature completely and radically negates the "eternal laws" of Hindu dharma which teach an identity between spirit and matter*. That is precisely why the Hindutva apologists are so keen to tame modern science by reducing it to "simply another name for the One Truth" - the "one truth" of Absolute Consciousness contained in Hinduism's own classical texts.

If Hindu propagandists can go this far in U.K., imagine their power in India, where they control the Central government and its agencies for media, education and research. This obsession for finding all kinds of science in all kinds of obscure Hindu doctrines has been dictating the official educational policy of the Bharatiya Janata Party ever since it came to power nearly half a decade ago.

Indeed the BJP government can teach a thing or two to the creation scientists in the U.S. Creationists, old and new, are trying to smuggle in Christian dogma into secular schools in the U.S. by redefining science in a way that allows God to be brought in

as a cause of natural phenomena. This "theistic science" is meant to serve as the thin-edge of the wedge that will pry open the secular establishment. Unlike the creationists who have to contend with the courts and the legislatures in the U.S., the Indian government itself wields the wedge of Vedic science intended to dismantle the (admittedly half-hearted) secularist education policies. By teaching Vedic Hinduism as "science", the Indian state and elites can portray India as "secular" and "modern", a model of sobriety and responsibility in contrast with those obscurantist Islamic fundamentalists across the border who insist on keeping science out of their *madrassa*s. How useful is this appellation of "science", for it dresses up so much religious indoctrination as "secular education".

Under the kindly patronage of the state, Hindutva's wedge strategy is working wonders. Astrology is flourishing as an academic subject in public and private colleges and universities, and is being put to use in predicting future earthquakes and other natural disasters. Such "sciences" as *Vastu Shastra* and Vedic mathematics are attracting governmental grants for research and education. While the Ministry of Defence is sponsoring research and development of weapons and devices with magical powers mentioned in the ancient epics, the Health Ministry is investing in research, development and sale of cow urine, sold as a cure for all ailments from the Acquired Immune Deficiency Syndrome (AIDS) to tuberculosis (TB). Faith-healing and priest-craft are other "sciences" receiving public and private funding. In the rest of the culture, miracles and superstitions of all kinds have the blessings of influential public figures, including elected Members of Parliament.

THERE are two kinds of claims that feed the notion that the "Vedas are books of science". The first kind declared the entire Vedic corpus as converging with modern science, while the second concentrates on defending such esoteric practices as astrology, *vastu*, Ayurveda, transcendental meditation and so on as scientific within the Vedic paradigm. The first stream seeks to establish likeness, connections and convergences between radically opposed ideas (*guna* theory and atomic particles, for example). This stream does not relativise science: it simply grabs whatever theory of physics or biology may be popular with Western scientists at any given time, and claims that Hindu ideas are "like that", or "mean the same" and "therefore" are perfectly modern and rational. The second stream is far more radical, as it defends this "method" of drawing likenesses and correspondences between unlike entities as perfectly rational and "scientific" within the non-dualistic Vedic worldview. The second stream, in other words, relativises scientific method to dominant religious worldviews: it holds that the Hindu style of thinking by analogies and correspondences "directly revealed to the mind's eye" is as scientific within the "holistic" worldview of Vedic Hinduism, as the analytical and experimental methodology of modern science is to the "reductionist" worldview of Semitic religions. The relativist defence of eclecticism as a legitimate scientific method not

only provides a cover for the first stream, it also provides a generic defence of such emerging "alternative sciences" as "Vedic physics" and "Vedic creationism", as well as defending such pseudo-sciences as Vedic astrology, palmistry, TM (transcendental meditation) and new-age Ayurveda (Deepak Chopra style).

In what follows, I will examine how postmodernist and social constructivist critiques of science have lent support to both streams of Vedas-as-science literature.
But first, I must clarify what I mean by postmodernism.

Postmodernism is a mood, a disposition. The chief characteristic of the postmodernist disposition is that it is opposed to the Enlightenment, which is taken to be the core of modernism. Of course, there is no simple characterisation of the Enlightenment any more than there is of postmodernism. A rough and ready portrayal might go like this: Enlightenment is a general attitude fostered in the 17th and 18th centuries on the heels of the Scientific Revolution; it aims to replace superstition and authority of traditions and established religions with critical reason represented, above all, by the growth of modern science. The Enlightenment project was based upon a hope that improvement in secular scientific knowledge will lead to an improvement of the human condition, not just materially but also ethically and culturally. While the Enlightenment spirit flourished primarily in Europe and North America, intellectual movements in India, China, Japan, Latin America, Egypt and other parts of West Asia were also influenced by it. However, the combined weight of colonialism and cultural nationalism thwarted the Enlightenment spirit in non-Western societies.

Postmodernists are disillusioned with this triumphalist view of science dispelling ignorance and making the world a better place. Their despair leads them to question the possibility of progress toward some universal truth that everyone, everywhere must accept. Against the Enlightenment's faith in such universal "meta-narratives" advancing to truth, postmodernists prefer local traditions which are not entirely led by rational and instrumental criteria but make room for the sacred, the non-instrumental and even the irrational. Social constructivist theories of science nicely complement postmodernists' angst against science. There are many schools of social constructivism, including the "strong programme" of the Edinburgh (Scotland) school, and the "actor network" programme associated with a school in Paris, France. The many convoluted and abstruse arguments of these programmes do not concern us here. Basically, these programmes assert that modern science, which we take to be moving closer to objective truth about nature, is actually just one culture-bound way to look at nature: no better or worse than all other sciences of other cultures. Not just the agenda, but the content of all knowledge is socially constructed: the supposed "facts" of modern science are "Western" constructions, reflecting dominant interests and cultural biases of Western societies.

Following this logic, Indian critics of science, especially those led by the neo-Gandhians such as Ashis Nandy and Vandana Shiva, have argued for developing local science which is grounded in the civilisational ethos of India. Other well-known public intellectuals, including such stalwarts as Rajni Kothari, Veena Das, Claude Alvares and Shiv Vishwanathan, have thrown their considerable weight behind this civilisational view of knowledge. This perspective also has numerous sympathisers among "patriotic science" and the environmentalist and feminist movements. A defence of local knowledges against rationalisation and secularisation also underlies the fashionable theories of post-colonialism and subaltern studies, which have found a worldwide following through the writings of Partha Chatterjee, Gayatri Spivak, Homi Bhabha, Dipesh Chakrabarty and others. All these intellectuals and movements mentioned here have their roots in movements for social justice, environmental protection and women's rights - all traditional left-wing causes.

Social constructivist and postmodernist attacks on science have proven to be a blessing for *all* religious zealots, in all major faiths, as they no longer feel compelled to revise their metaphysics in the light of progress in our understanding of nature in relevant fields. But Hinduism displays a special resonance with the relativistic and holistic thought that finds favour among postmodernists. In the rest of this two-part paper, I will examine the general overlap between Hindu apologetics and postmodernist view of hybridity (part I) and alternative sciences (part II).

Postmodern "hybridity" and Hindu eclecticism

THE contemporary Hindu propagandists are inheritors of the 19th century neo-Hindu nationalists who started the tradition of dressing up the spirit-centered metaphysics of orthodox Hinduism in modern scientific clothes. The neo-Hindu intellectuals, in turn, were (consciously or unconsciously) displaying the well-known penchant of generations of Sanskrit pundits for drawing resemblances and correspondences between religious rituals, forces of nature and human destiny.

Postmodernist theories of knowledge have rehabilitated this "method" of drawing equivalences between different and contradictory worldviews and allowing them to "hybridise" across traditions. The postmodernist consensus is that since truth about the real world as-it-is cannot be known, all knowledge systems are equivalent to each other in being social constructions. Because they are all equally arbitrary, and none any more objective than other, they can be mixed and matched in order to serve the needs of human beings to live well in their own cultural universes. From the postmodern perspective, the VHP justification of the *guna* theory in terms of atomic physics is not anything to worry about: it is merely an example of "hybridity" between two different culturally constructed ways of seeing, a fusion between East

and West, tradition and modernity. Indeed, by postmodernist standards, it is not this hybridity that we should worry about, but rather we should oppose the "positivist" and "modernist" hubris that demands that non-Western cultures should give up, or alter, elements of their inherited cosmologies in the light of the growth of knowledge in natural sciences. Let us see how this view of hybridity meshes in with the Hindutva construction of Vedic science.

It is a well-known fact that Hinduism uses its eclectic *mantra* - "Truth is one, the wise call it by different names" - as an instrument for self-aggrandisement. Abrahamic religions go about converting the Other through persuasion and through the use of physical force. Hinduism, in contrast, absorbs the alien Other by proclaiming its doctrines to be only "different names for the One Truth" contained in Hinduism's own Perennial Wisdom. The teachings of the outsider, the dissenter or the innovator are simply declared to be merely nominally different, a minor and inferior variation of the Absolute and Universal Truth known to Vedic Hindus from time immemorial. Christianity and Islam at least acknowledge the radical otherness and difference of other faiths, even as they attempt to convert them, even at the cost of great violence and mayhem. Hinduism refuses to grant other faiths their distinctiveness and difference, even as it proclaims its great "tolerance". Hinduism's "tolerance" is a mere disguise for its narcissistic obsession with its own greatness.

Whereas classical Hinduism limited this passive-aggressive form of conquest to matters of religious doctrine, neo-Hindu intellectuals have extended this mode of conquest to secular knowledge of modern science as well. The tradition of claiming modern science as "just another name" for the spiritual truths of the Vedas started with the Bengal Renaissance. The contemporary Hindutva follows in the footsteps of this tradition.

The Vedic science movement began in 1893 when Swami Vivekananda (1863-1902) addressed the World Parliament of Religions in Chicago. In that famous address, he sought to present Hinduism not just as a fulfilment of all other religions, but also as a fulfilment of all of science. Vivekananda claimed that only the spiritual monism of Advaita Vedanta could fulfil the ultimate goal of natural science, which he saw as the search for the ultimate source of the energy that creates and sustains the world.

Vivekananda was followed by another Bengali nationalist-turned-spiritualist, Sri Aurobindo (1872-1950). Aurobindo proposed a divine theory of evolution that treats evolution as the adventures of the World-Spirit finding its own fulfilment through progressively higher levels of consciousness, from matter to man to the yet-to-come harmonious "supermind" of a socialistic collective. Newer theories of Vedic creationism, which propose to replace Darwinian evolution with "devolution"

from the original one-ness with Brahman, are now being proposed with utmost seriousness by the Hare Krishnas who, for all their scandals and idiosyncrasies, remain faithful to the spirit of Vaishnava Hinduism.

Vivekananda and Aurobindo lit the spark that has continued to fire the nationalist imagination, right to the present time. The Neo-Hindu literature of the 19th and early 20th centuries, especially the writings of Dayanand Saraswati, S. Radhakrishnan and the many followers of Vivekananda, is replete with celebration of Hinduism as a "scientific" religion. Even secularists like Jawaharlal Nehru remained captive of this idea that the original teachings of Vedic Hinduism were consonant with modern science, but only corrupted later by the gradual deposits of superstition. Countless gurus and *swami*s began to teach that the Vedas are simply "another name for science" and that all of science only affirms what the Vedas have taught. This scientistic version of Hinduism has found its way to the West through the numerous *ashram*s and yoga retreats set up, most prominently, by Maharishi Mahesh Yogi and his many clones.

ALL these numerous celebrations of "Vedas as science" follow a similar intellectual strategy of finding analogies and equivalences. All invoke extremely speculative theories from modern cosmology, quantum mechanics, vitalistic theories of biology and parapsychology, and other fringe sciences. They read back these sciences into Sanskrit texts chosen at will, and their meaning decided by the whim of the interpreter, and claim that the entities and processes mentioned in Sanskrit texts are "like", "the same thing as", or "another word for" the ideas expressed in modern cosmology, quantum physics or biology. Thus there is a bit of a Brahman here and a bit of quantum mechanics there, the two treated as interchangeable; there are references to "energy", a scientific term with a definite mathematical formulation in physics, which gets to mean "consciousness"; references to Newton's laws of action and reaction are made to stand for the laws of *karma* and reincarnation; completely discredited "evidence" from parapsychology and "secret life of plants" are upheld as proofs of the presence of different degrees of soul in all matter; "evolution" is taught as the self-manifestation of Brahman and so on. *The terms are scientific, but the content is religious*. There is no regard for consistency either of scientific concepts, or of religious ideas. Both wholes are broken apart, random connections and correspondences are established and with great smugness, the two modes of knowing are declared to be equivalent, and even inter-changeable. The only driving force, the only idea that gives this whole mish-mash any coherence, is the great anxiety to preserve and protect Hinduism from a rational critique and demystification. Vedic science is motivated by cultural chauvinism, pure and simple.

What does all this have to do with postmodernism, one may legitimately ask. Neo-Hinduism, after all, has a history dating back at least two centuries, and the analogical logic on which claims of Vedic science are based goes back to times immemorial.

Neo-Hinduism did not start with postmodernism, obviously. And neither does Hindutva share the postmodernist urgency to "overcome" and "go beyond" the modernist fascination with progress and development. Far from it. Neo-Hinduism and Hindutva are *reactionary modernist* movements, intent on harnessing a mindless and even dangerous technological modernisation for the advancement of a traditionalist, deeply anti-secular and illiberal social agenda. Nevertheless, they share a postmodernist philosophy of science that celebrates the kind of contradictory mish-mash of science, spirituality, mysticism and pure superstition that that passes as "Vedic science".

For those modernists who share the Enlightenment's hope for overcoming ignorance and superstition, the value of modern science lies in its objectivity and universality. Modernists see modern science as having developed a critical tradition that insists upon subjecting our hypotheses about nature to the strictest, most demanding empirical tests and rigorously rejecting those hypotheses whose predictions fail to be verified. For the modernist, the success of science in explaining the workings of nature mean that sciences in other cultures have a rational obligation to revise their standards of what kind of evidence is admissible as science, what kind of logic is reasonable, and how to distinguish justified knowledge from mere beliefs. For the modernists, furthermore, modern science has provided a way to explain the workings of nature without any need to bring in supernatural and untestable causes such as a creator God, or an immanent Spirit.

For a postmodernist, however, this modernist faith in science is only a sign of Eurocentrism and cultural imperialism. For a postmodernist, other cultures are under no rational obligation to revise their cosmologies, or adopt new procedures for ascertaining facts to bring them in accord with modern science. Far from producing a uniquely objective and universally valid account of nature, the "facts" of modern science are only one among many other ways of constructing other "facts" about nature, which are equally valid for other cultures. Nature-in-itself cannot be known without imposing classifications and meaning on it which are derived from cultural metaphors and models. All ways of seeing nature are at par because all are equally culture-bound. Modern science has no special claims to truth and to our convictions, for it is as much of a cultural construct of the West as other sciences are of their own cultures.

This view of science is derived from a variety of American and European philosophies of science, associated mostly with such well-known philosophers as Thomas Kuhn, Paul Feyerabend, W.O Quine, Ludwig Wittgenstein and Michel Foucault. This view of science has been gaining popularity among Indian scholars of science since the infamous "scientific temper" debates in early 1980s when Ashis Nandy, Vandana Shiva and their sympathisers came out in defence of local knowledges and traditions, including astrology, goddess worship as cure for small-pox, taboos against menstruation and (later on) even *sati*. Over the next two decades, it became a general practice in Indian scholarly writing to treat modern science as just one way to adjudicate belief, no different from any other tradition of sorting out truth from mere group belief. Rationalism became a dirty word and Enlightenment became a stand-in for "epistemic violence" of colonialism.

According to those who subscribe to this relativist philosophy, the cross-cultural encounter between modern science and traditional sciences is not a confrontation between more and less objective knowledge, respectively. Rather it is a confrontation between two different cultural ways of seeing the world, neither of which can claim to represent reality-in-itself. Indeed, many radical feminists and post-colonial critics go even further: they see modern science as having lost its way and turned into a power of oppression and exploitation. They want non-Western people not just to resist science but to reform it by confronting it with their holistic traditional sciences.

What happens when traditional cultures *do* need to adopt at least some elements of modern knowledge? In such cases, postmodernists recommend exactly the kind of "hybridity" as we have seen in the case of Vedic sciences in which, for example, sub-atomic particles are interpreted as referring to *guna*s, or where quantum energy is interpreted to be the "same as" *shakti*, or where *karma* is interpreted to be a determinant of biology in a "similar manner" as the genetic code and so on. On the postmodern account, there is nothing irrational or unscientific about this "method" of drawing equivalences and correspondences between entirely unlike entities and ideas, even when there may be serious contradictions between the two. On this account, *all* science is based upon metaphors and analogies that reinforce dominant cultures and social power, and all "facts" of nature are really interpretations of nature through the lens of dominant culture. It is perfectly rational, on this account, for Hindu nationalists to want to reinterpret the "facts" of modern science by drawing analogies with the dominant cultural models supplied by Hinduism. Because no system of knowledge can claim to know reality as it really is, because our best confirmed science is ultimately a cultural construct, all cultures are free to pick and choose and mix various "facts", as long as they do not disrupt their own time-honoured worldviews.

This view of reinterpretation of "Western" science to fit into the tradition-sanctioned, local knowledges of "the people" has been advocated by theories of "critical traditionalism" propounded by Ashis Nandy and Bhiku Parekh in India and by the numerous admirers of Homi Bhabha's obscure writings on "hybridity" abroad. In the West, this view has found great favour among feminists, notably Sandra Harding and Donna Haraway, and among anthropologists of science including Bruno Latour, David Hess and their followers.

To conclude, one finds a convergence between the fashionable left's position with the religious right's position on the science question. The extreme scepticism of postmodern intellectuals toward modern science has landed them in a position where they cannot, if they are to remain true to their beliefs, criticise Hindutva's eclectic take-over of modern science for the glory of the Vedic tradition.

Meera Nanda is the author of Prophets Facing Backward: Postmodern Critiques of Science and Hindu Nationalism *(Rutgers University Press, 2003). An Indian edition of the book will be published by Permanent Black in early 2004*.

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Meera Nanda, Postmodernism, Hindu nationalism and `Vedic science', 2004

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The second and concluding part of the two-part article.

IN the first part of this essay I examined how Hindutva ideologues constructed the myth of "Vedas as books of science" (*Frontline*, January 2). I argued that the anti-science rhetoric of postmodern intellectuals has given philosophical respectability to the eclectic patchwork of science and Hindu metaphysics that goes under the name of Vedic science. In this part, I will examine the philosophical arguments for "alternative sciences" favoured by prominent feminists, environmentalists and postcolonial intellectuals and show how they converge with the right-wing's claims of superiority of "holistic" and "authentic" sciences of Hindus. I want to start by placing these debates in the historical context of Hindu "renaissance".

Postcolonialism and the myth of Hindu "renaissance"

The roots of "Vedic science" can be traced to the so-called Bengal Renaissance, which in turn was deeply influenced by the Orientalist constructions of Vedic antiquity as the "Golden Age" of Hinduism. Heavily influenced by German idealism and British romanticism, important Orientalists including H.T. Colebrooke, Max Mueller and Paul Deussen tended to locate the central core of Hindu thought in the Vedas, the Upanishads and, above all, in the Advaita Vedanta tradition of Shankara. Despite the deeply anti-rational and idealistic (that is, anti-naturalistic) elements of Advaita Vedanta, key Hindu nationalist reformers - from Raja Ram Mohun Roy and Bankim Chandra Chatterjee to Swami Vivekananda - began to find in it all the elements of modernity. Vivekananda took the lead in propagating the view that the monism of Advaita Vedanta presaged the future culmination of all of modern science. Since modern science denied the role of any supernatural force outside nature, Vivekananda claimed that only Vedantic monism was truly scientific for it treated God as an aspect of nature and did not invoke any force external to nature.

Prime Minister Atal Bihari Vajpayee at Rajghat. Hiding behind their great mascot does not help postmodern scholars, for Hindutva also claims Gandhi to be its own mascot.

A slight digression on the subject of Indian "renaissance" might be appropriate here. Through constant and loud repetition, neo-Hindu thinkers have created a myth that Brahminical traditions of learning represent the golden age of science and reason in early India. The Hindutva literature is replete with glowing tributes to Hindu "renaissance", which they claim to be similar to the European Renaissance that ushered in the modern age in the West. What they forget is that the Renaissance in the West re-discovered the humanistic and naturalistic sources of the Greek tradition that had been overshadowed by the Catholic Church - the Renaissance humanists rediscovered this-worldly philosophy of Aristotle and critical-realist Socrates over the other-worldly philosophy of Plato. The neo-Hindu "renaissance", in contrast, re-discovered the most mystical and anti-humanistic elements of the Vedic inheritance - Advaita Vedanta - that had always overshadowed and silenced the naturalistic and scientific traditions in Hinduism and Buddhism. Neo-Hinduism is no renaissance, but a revival.

There is no denying that the neo-Hindu "discovery" of modern science in ancient teachings of Vedas and Upanishads had a limited usefulness. Since they had convinced themselves that their religion was the mother of all sciences, conservative Hindus did not feel threatened by scientific education. As long as science could be treated as "just another name" for Vedic truths, they were even enthusiastic to learn it. The Brahminical traditions of learning and speculative thought served the upper castes well, as they took to modern English education, which included instruction in scientific subjects. Those who would explicitly use scientific learning to challenge the traditional outlook were either lower down on the caste hierarchy or "godless Communists" anyway, and could be safely ignored. The great neo-Hindu "renaissance" succeeded in turning empirical sciences into the handmaiden of the Vedic tradition - the role reason has performed throughout India's history. This is the tradition that the Sangh Parivar is institutionalising in our schools, universities and the public sphere.

Let us see what India's best-known contemporary public intellectuals have to say on this matter. As it happens, the emergence of neo-Hinduism in 19th century Bengal has perhaps been the most written about episode in modern India's intellectual history. All our best-known intellectuals whose names are practically synonymous with postcolonial theory around the world - Ashis Nandy, Partha Chatterjee, Gayatri Spivak, Dipesh Chakrabarty and the Subaltern Studies historians - have cut their scholarly teeth on the emergence of neo-Hindu thought in the Bengali *bhadralok* circles. These intellectuals stand out because they work with a post-structuralist rejection of the very possibility of the idea of dispassionate and objective knowledge of the real world in any domain, natural or social. Following the political writing of French philosopher Michel Foucault, made popular among the historians of colonialism by the writings of Edward Said, these scholars see Western sciences

as serving colonial interests in defining the non-West as inferior, irrational and unscientific. Indian intellectuals have both contributed to the development of this critique of colonial knowledge and applied it to the Indian condition.

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Jawaharlal Nehru

By and large, these postcolonial scholars have criticised the neo-Hindu penchant for scienticising the Vedas, but for reasons that actually open the door to an even more radical defence of Vedic science that is now emerging in Hindutva literature. Ashis Nandy and Partha Chatterjee, both writers of international best-sellers on the emergence of modern thought in India, condemned the emerging Hindu modernists all across the political spectrum - from the apologists for Hinduism such as Vivekananda, Aurobindo and Bankim Chandra Chatterjee to the liberal, secular-humanist Nehru - not for so falsely and so self-servingly appropriating modern science in the service of propagating religious orthodoxy and not for confusing myth and science in order to defend their mythology. No, that kind of critique of nativism that would defend the distinctiveness of science and insist upon its potential for demystification of religious reason was considered too passé, too "positivist" by our avant-garde theorists. Rather, Nandy, Chatterjee and their followers condemned Indian nationalists for even daring to apply alien, colonial categories of thought to India's own traditions and ways of knowing.

For these postmarked intellectuals, the cardinal sin of Hindu nationalists was not their defence of the high-Hindu tradition - a tradition which has for centuries contributed to the worst kind of ignorance and social inequality. Their cardinal sin was their capitulation to modern scientific thought itself, which they tried to appropriate for Hinduism (as in the case of Vivekananda, Bankim Chandra and even

Nehru), or which they tried to use for secular Enlightenment (as in the case of Marxist and socialist humanists like Nehru). Incidentally, these two positions seem to exhaust the entire range of nationalism. The valiant attempts of Dalit and non-Brahmin intellectuals such as B.R. Ambedkar, E.V. Ramaswamy Periyar, Jyotiba Phule and Iyothee Thass to use the new knowledge to liberate themselves from the shackles of tradition are simply invisible in the postmodernist literature which is keen on showing modern science as an agent of oppression and mental colonialism. As long as Indian thought was being measured in modern scientific terms, whether to praise it, or to demystify it, the Indian mind was being "colonised" and it was denied the "agency" to define its own agenda and its own solutions. Both the Hindu right and the Nehruvian left, as long as they remained prisoners of modern scientific ways of thinking, were equally "derivatives" of their colonial masters.

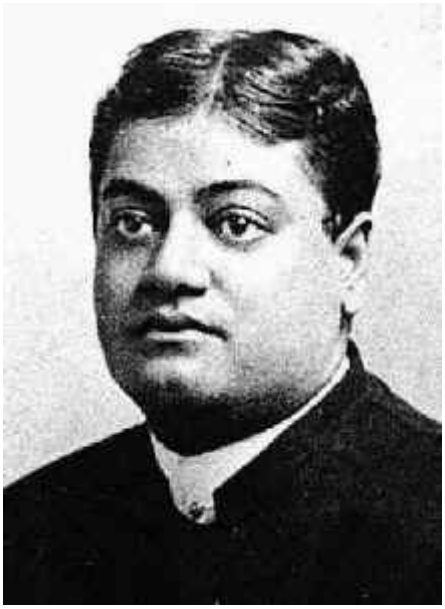
Authentic national liberation, on this account, can only come with the rediscovery of authentic traditions of India which, apparently, were only understood by Mahatma Gandhi. For all their nods to the anti-essentialism of postmodernism, Indian critics of modernity practise a sly form of "strategic essentialism" (Gayatri Spivak's term) that treats Indian traditions as unique to India which cannot be understood by outsiders. True national liberation will mean a rediscovery of India's unique gestalt, which, in the postcolonial narrative, lies in its holism, monism or non-dualism, as compared to the tendency of the Western science towards separation of objects from their context. Indian thought is not to be seen either as a copy of modern science, or somehow lacking in empirical sciences, but as encoding a wholly different kind of science altogether, which is the duty of post-secular, postmodern intellectuals to discover and cultivate. Coming from the traditions of the Gandhian and populist left, the postmodernists tend to find these alternative traditions among the non-modern habits of the heart of the humble, folk traditions of women, peasants, village folk and assorted subaltern groups. Gandhi became their patron saint of this uniquely Indian, non-modern way of life. "Real India" equals Gandhi equals "innocent traditions" of non-modern "communities". Anyone challenging any of the factors in the equation was declared to have a "colonised mind".

This critique of modernist nationalism-as-mental-colonialism has come to serve as the fig leaf for the postmodernists as they scramble to dissociate themselves from the contemporary Hindutva movement, which has also nailed its colours to "decolonisation of the Indian mind". Nandy and his many admirers are trying to distance themselves from it by continuing with their critique of the Hindu nationalism as being wedded to modernism. They point to the modernist, scientistic rhetoric of Hindutva propagandists and proclaim Hindutva to be just one more symptom of modernity. The problem is that using modernist rhetoric does not make one modern. On the contrary, by framing the traditional Hindu worldview in a modernist vocabulary, Hindutva is co-opting modern ideas, giving traditions a

modern gloss to make them palatable to the educated middle classes. Hindutva is a reactionary modernist movement that accepts the instrumental uses of science (that is, technology) but resists the secular enlightenment that is a necessary precondition of modernity. Hiding behind the great mascot of postmodern scholars, Gandhi - supposedly the guardian angel of the "innocent" folk traditions - does not work either, for Hindutva also claims Gandhi to be its own mascot. Hindu nationalists have no problem with Gandhi's deeply anti-secular and anti-modern world-view; they "only" dislike and disown his pacifism.

Postmodernism and "alternative sciences"

Yet, one could argue that just because postmodernist intellectuals have taken a position against the Enlightenment-style use of science as a cultural weapon against the authority of the traditions does not automatically make them an ally of the religious right. One could, after all, justly criticise the role of science and technology in furthering Western exploitation of the colonies and perpetuating patronising attitudes toward the natives. Science is not beyond criticism, and critics of science do not automatically deserve condemnation.



Vivekananda

The problem is that postmodernist intellectuals do not stop at criticising any specific political abuse of scientific knowledge. Instead, they attack the very idea of objective knowledge as a myth of the powerful who want to claim the status of truth for their own self-serving social constructions of reality. Likewise, postmodernist attack on the "Western-ness" of science goes beyond pointing out any specific linkages between science and Western/imperialist interests. Instead they attack the claim of universalism of science as a cover for Western dominance.

Once they decry the very idea of objectivity and universalism, the critics open the gates wide to the idea of "alternative sciences". The idea is that modern science

offers only one way to classify, observe and understand the regularities of nature: there is nothing inherently objective and scientific about it. Other cultures, the argument goes, if they want to really "decolonise their minds", must develop their own scientific methods which are in keeping with their own religion and culture - "different cultures, different sciences", is the postmodern slogan. Since all knowledge rests on the shifting sands of myths, models and analogies (or "paradigms", as the more technical name goes), which scientists just pick up through their textbooks, there is no reason why sciences of non-Western cultures cannot constitute new "alternative universals" that can be taught in textbooks and laboratories around the world.

These radical critiques of objectivity and universalism have become so popular that they have acquired a ring of truth among social critics. But all these arguments denigrating the rationality of science are based upon a flawed understanding of science that has been rejected many times by working scientists and prominent philosophers of science. A complete debunking of post-modern misunderstanding of how science actually works and why objectivity is possible despite the deeply social nature of science will require a different set of articles. Suffice it to say, the radical denigration of science has very little following among the mainstream of scientific community and in the mainstream of philosophy and history of science.

I now examine three distinct arguments that have emerged in the Indian postmodernist literature which converge almost exactly with the Hindutva's defence of the superiority of Vedic sciences. These three are the decolonisation argument, the anti-dualism argument and the symmetry argument.

The decolonisation of science argument

Hindutva ideologues see themselves as part and parcel of postcolonial studies. Decolonisation of the Hindu mind, the Hindu Right claims, requires understanding science through Hindu categories. Echoing the postcolonial critiques of epistemic violence, Hindutva ideologues such as Murli Manohar Joshi, Konrad Elst, Girilal Jain, David Frawley, N.S. Rajaram and others see any scientific assessment of the empirical claims made by the Vedic texts as a sign of mental colonialism and Western imperialism. Many of these Hindutva ideologues cite the work of postcolonial scholars such as Edward Said, Roland Inden, Ashis Nandy, Claude Alvares, Gayatri Spivak and subaltern studies historians with great respect.

The Hindu Right combines this demand for authenticity with an essentialist understanding of culture borrowed straight from Oswald Spengler's *Decline of the West,* which holds that each culture has an innate nature, a temper, which must guide all its cultural products from mathematics and physics to painting and poetry. This view of the innate nature of nation - the nation's *svabhava* or *chitti* - is propounded by Deen Dayal Upadhyaya's theory of "Integral Humanism", which

constitutes the official philosophy of the Bharatiya Janata Party. In fact, it is part of the BJP's official manifesto that it will use India's innate Hinduness as a "touchstone" to decide what sciences will be promoted and how they will be taught. Using this touchstone of an innate, timeless Hindu *svabhava*, Hindutva literature still holds on to the defunct theories of vitalism as valid science. (Vitalism in biology holds that living beings require a special vital force, variously termed *prana* or *shakti* in the Indian literature, over and above "mere" atoms and molecules. In India, Jagdish Chandra Bose first claimed to find evidence of consciousness in plants. Bose's work was falsified and rejected by mainstream biology in his own life-time. It is still touted as India's contribution to world science in Hindutva literature.) Again, it is against the touchstone of Vedanta that Hindu apologists feel justified in interpreting the paradoxes of quantum physics in a mystical manner. There are perfectly realistic explanations of quantum mechanics, which are sidelined in Vedic science literature, to claim that modern physics "proves" the presence of mind in nature, just as claimed by Vedanta.

Reductionist science vs holistic science

The gist of this argument, as it appears in Hindu nationalist writings on Vedic science, is simple - all that is dangerous and false in modern science comes from the Semitic monotheistic habit of dualistic and "reductionist" thinking, which separates the object from the subject, nature from consciousness, the known from the knower. All that is truly universal and true in modern science comes from the Hindu habit of "holistic" thinking, which has always seen the objects in nature and the human subjects not as separate entities but as different manifestations of the same universal consciousness. For the non-logocentric Hinduism, reality is not objective, but "omnijective", a co-construct of mind and matter together. While Western science treats nature as dead matter, Hindu sciences treat nature as a sacred abode of gods. Thus Hindutva scholars claim that traditions of yoga, transcendental meditation (TM) and Ayurveda are sciences of the future, for they bring matter in alignment with the "cosmic energy" that permeates all matter. Moreover, Hindu approaches to nature are seen as ecological by definition as they do not treat nature as mere matter to be exploited for private use.

Aurobindo

This view of superiority of Hinduism's "holism" rests upon the strange and totally mistaken assumption that Hindu chauvinists share with left-wing critics of science - that the fundamental methodology of modern science, what is called "reductionism", is not just mistaken but politically oppressive. Reductionism in science simply means a bottom-up approach to understanding complex natural phenomena by first isolating the lower-level constituents and studying their interactions under controlled conditions. Reductionism seeks the explanation of the whole by eliminating the need for postulating any extra forces (that is, consciousness, vital force and so on) over and above the relationships between the building blocks that can be experimentally tested. Far from being simple-minded or sinister, as critics assume, nearly every advance in understanding complex systems - from the DNA replication at the cellular level to ecological systems - owes its success to a reductionist approach to the fundamental building blocks of nature.

Owing to a fundamental misunderstanding of how science actually works, coupled with a great deal of cynicism, many left-wing critics among feminist, environmental and anti-imperialist movements have developed a knee-jerk condemnation of reductionism. Reductionist science is considered bad science with politically oppressive implications. Feminists, including such world-renowned feminist icons as Carolyn Merchant, Sandra Harding and Donna Haraway, see it as a masculine way of breaking the unity between the object and the subject. Environmentalists, including India's own Vandana Shiva and like-mined eco-feminists, see reductionism as opening the way to ruthless exploitation of nature by divesting it of all sacred meanings. (Eco-romantics ignore all counter-examples where sacredness of nature serves to control access over sacred groves, rivers and other resources of the commons.) Postcolonial critics, in their turn, see reductionism as a result of Western and capitalist habit of thinking in terms of opposed classes of `us and them'.

These kinds of ill-understood and politically motivated challenges to a fundamental methodological norm of modern science have prepared the ground for Hindutva's claims that Hinduism provides a more "holistic", more complete, more ecological and even more feminist way of relating with nature. Most of the claims of superiority of "holism" are unsubstantiated. On closer examination, they end up affirming pseudo-sciences involving disembodied spirit acting on matter through entirely unspecified mechanisms. Most of the claims of greater ecological and feminist sensitivity in the Hindu practice of treating all nature as a sacred and interconnected whole turn out to be empirically false. In fact, quite often the faith in the divine powers of some rivers and plants serves as an excuse not to care for them adequately, precisely because they are considered to share God's miraculous powers to recover and stay pure. For all the falsehoods and obscurantisms, the claims of Hindu (or Eastern, more broadly) holism thrive in the academia because of the radical academics' own mistaken and overblown critique of the reductionist methodology of science.

The symmetry argument

The symmetry argument claims that all local sciences are equally "scientific" (that is, rational, coherent and able to explain observed phenomena) within their own cultural contexts. Modern science, the argument goes, ought to be treated "symmetrically" with all other ways of knowing. As we have seen, this is the crux of the social constructivist and postmodern attacks on modern science.

This argument lies at the heart of the theories of "Vedic physics" and "Vedic creationism". That the verses of the Rig Veda are actually coded formulas of advanced theories of physics has been recently claimed by Subhash Kak, an engineer working in the United States. And a Vedic alternative to Darwinian evolution by natural selection is being pushed by Michael Cremo and his fellow Hare Krishnas in the U.S. What sets these newer theories is their unabashed and bold defence of Vedic mysticism as a legitimate scientific method within the Vedic-Hindu metaphysical assumptions, as rational and empirically adequate as the best of modern science, and as deserving of the status of universal objective knowledge as the conventionally accepted theories of matter and biological evolution.

In a barrage of books and essays, most recently summarised in the 1995 publication, *In Search of the Cradle of Civilisation*, Subhash Kak has claimed to find, in a coded form, advanced knowledge of astronomy and computing in the Rig Veda. According to Kak, the design of the fire altars prescribed in the Rig Veda - how many bricks to put where and surrounded by how many pebbles - actually code such findings of modern 20th century astronomy as the distance between the sun and the earth, the length of solar and lunar years and the speed of light. All the Vedic values match exactly with the values we know through modern 19th and 20th

century physics. The number of bricks and pebbles, moreover, corresponds with the number of syllables in the Vedic verses. The conclusion: "the Vedas are books of physics."

Dr. B.R. Ambedkar

Finding relatively advanced abstract physics in the Rig Veda, the earliest of the four Vedas, is of crucial importance to Hindutva. There is a concerted attempt to prove that the Rig Veda was composed at least around three millennia B.C., and not around 1500 B.C as previously thought. There is also a massive effort afoot in Hindutva circles that the Aryans who wrote the Rig Veda presumably in 3000 B.C. were indigenous to the landmass of India. Under these circumstances, finding advanced physics in Rig Veda will "prove" that India was truly the mother of all civilisations and produced all science known to the Greeks and other ancient cultures.

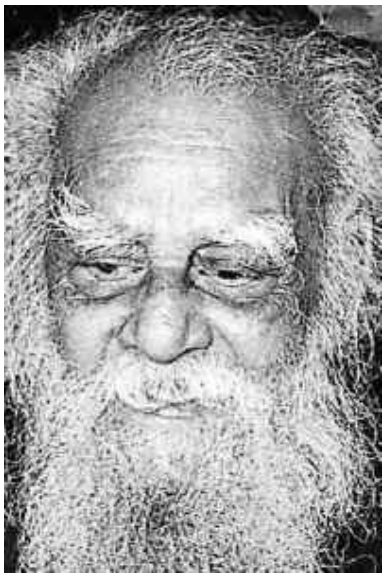
But anyone making such dramatic claims has to answer the question: How did our Vedic ancestors know all this physics? What was their method?

Kak and associates (including David Frawley and George Feuerstein, co-authors with Kak of *In Search of the Cradle of Civilisation*) answer, incredibly, that the Vedic scientists found out the laws of physics through deep introspection. Yogic meditation allowed Vedic sages to see in their minds' eyes, the likenesses, homologies and equivalences between the cosmic, the terrestrial and the spiritual. This method of seeing analogies and equivalences may be considered magical in the West, they argue, but it is perfectly scientific within India's non-dualist, monist metaphysics which allows no distinctions between matter and spirit, between physical and the psychic, between animate and the inanimate - all are united by the same spiritual energy that is in all. Within these assumptions, yogic introspection is a method of science. Because all science is paradigm-bound, Kak *et al* insist, citing the authority of Thomas Kuhn and Paul Feyerabend, the much-misunderstood gurus

of postmodernists, Vedic science is perfectly scientific within the paradigm of Vedic assumptions.

In fact, Kak *et al* are not alone in defending the scientificity of yogic meditation as a valid scientific method. Maharishi Mahesh Yogi's "unified science" is based upon this logic. This kind of cultural defence is routinely invoked by those defending such esoteric pseudo-sciences as Vedic astrology and paranormal beliefs (past-birth memories, out-of-body experiences and reincarnation).

A similar defence of the method of bhakti yoga as a legitimate source of holistic knowledge lies at the basis of the enormous mass of writings coming out of the Bhakti Vedanta Institute in the U.S., the headquarters of the Hare Krishnas. In a new book, *Human Devolution*, Michael Cremo, a devout Hare Krishna, has boldly proposed a Vedic alternative to Darwinian evolution. Cremo claims that human beings have not evolved up from lower animals, but rather fallen, or devolved, from their original unity with pure consciousness of *Brahman*. (In a previous book, *Forbidden Archaeology*, Cremo and his associates tried to prove that the fossil record actually supports the Vedic time scale of literally millions of years of life on earth, including human life.) As evidence, Cremo cites every possible research in paranormal ever conducted anywhere to "prove" the truth of holist Vedic cosmology which proposes the presence of a spiritual element in all matter (which takes different forms, thereby explaining the theory of "devolution").



E.V. Ramaswamy Periyar

This remarkable compendium of pseudo-science is premised upon the assumption that modern science is a prisoner of Western cultural and religious biases and, as a result, Western scientists have created a "knowledge filter" which keeps out the evidence that supports the Vedic cosmology. Their point is that once you remove the Western assumptions, the method of yoga can be treated as a legitimate source of scientific hypotheses. These Vedic knowledge-claims can be verified by the

community of other yogic knowers who have "purified" their sense through meditation to such an extent that they can "directly realise" those signs from the spirit-world that are looked down upon by Western-trained scientists as "paranormal".

Utterly incredible though they are, and utterly devoid of any empirical support, Vedic physics and Vedic creationism are being touted as serious scholarship based upon the assumption that different cultural assumptions sanction alternative methods as rational and scientific.

POSTMODERN intellectuals have taken their disillusionment with the many shortcomings of the modern world into a radical denunciation of modern science itself. They have denounced the status of modern science as a source of universally valid and objective knowledge as a sign of Western imperialism, patriarchal biases and Christian dualist thinking. Many prominent public intellectuals in India, sympathetic to populist, indigenist currents in left-inclined social movements, have embraced the postmodernist suspicion of science, and called for "alternative sciences" which reflect the cultural preferences of India's non-modern masses.

The question before the defenders of "alternative sciences" is this: What do they have to say to the defenders of "Vedic sciences"? For example, what reasons can they give against the supposed scientificity of Vedic astrology? Can they hold on their relativist view of all sciences as social constructs and yet challenge the scientisation of the Vedas that is going on in the theories of Vedic physics or Vedic creationism?

Any erosion of the dividing line between science and myth, between reasoned, evidence-based public knowledge and the spiritual knowledge accessible to yogic adepts, is bound to lead to a growth of obscurantism dressed up as science. It is time secular and self-proclaimed leftist intellectuals called off their romance with irrationalism and romanticism. It is time to draw clear boundaries between science and myth, and between the Left and the Right.

- *Meera Nanda is the author of* Prophets Facing Backward: Postmodern Critiques of Science and Hindu Nationalism *(Rutgers University Press, 2003), and of* Breaking the Spell of Dharma and Other Essays *(Three Essays Collective; 2002).*

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